

AATATTTTCCTTGACCTAATGCCATCTTGTGTCCCCTTGCAGAGCCCTATTCCTAACATGGCTGATGACTA  
 TGGCTCTGAATCCACATCTTCCATGGAAGACTACGTAACTTCAACTTCACTGACTTCTACTGTGAGAAAA  
 ACAATGTCAGGCAGTTTGGGAGCCATTTCCCTCCCACCCTTGTACTGGCTCGTGTTCATCGTGGGTGCCTTG  
 GGCAACAGTCTTGTATCCTTGTCTACTGGTACTGCACAAGAGTGAAGACCATGACCGACATGTTCTTTT  
 GAATTTGGCAATTGCTGACCTCCTCTTTCTTGTCACTCTTCCCTTCTGGGCCATTGCTGCTGCTGACCAGT  
 GGAAGTTCCAGACCTTCATGTGCAAGGTGGTCAACAGCATGTACAAGATGAACTTCTACAGCTGTGTGTTG  
 CTGATCATGTGCATCAGCGTGGACAGGTACATTGCCATTGCCCAGGCCATGAGAGCACATACTTGGAGGGA  
 GAAAAGGCTTTTGTACAGCAAAATGGTTTGTCTTACCATCTGGGTATTGGCAGCTGCTCTCTGCATCCCAG  
 AAATCTTATACAGCCAAATCAAGGAGGAATCCGGCATTGCTATCTGCACCATGGTTTACCCTAGCGATGAG  
 AGCACCAAATGAAGTCAGCTGTCTTGACCCTGAAGGTCATTCTGGGGTTCTTCCCTTCCCTTCGTGGTCAT  
 GGCTTGCTGCTATACCATCATCATTCACACCCTGATACAAGCCAAGAAGTCTTCCAAGCACAAAGCCCTAA  
 AAGTGACCATCACTGTCTGACCGTCTTTGTCTTGTCTCAGTTTCCCTACAACATGCATTTTGTGGTGCAG  
 ACCATTGACGCCTATGCCATGTTTCACTCTCCAACCTGTGCCGTTTCCACCAACATTGACATCTGCTTCCAGGT  
 CACCCAGACCATCGCCTTCTTCCACAGTTGCCTGAACCCTGTTCTCTATGTTTTTGTGGGTGAGAGATTCC  
 GCCGGGATCTCGTGAAAACCTGAAGAACTTGGGTGTCATCAGCCAGGCCAGTGGGTTCATTTACAAGG  
 AGAGAGGGAAGCTTGAAGCTGTCGTCTATGTTGCTGGAGACAACCTCAGGAGCACTCTCCCTCTGAGGGGT  
 CTTCTCTGAGGTGCATGGTTCTTTTGAAGAAATGAGAAATACATGAAACAGTTTCCCCACTGATGGGACC  
 AGAGAGAGTGAAAGAGAAAAGAAAACCTCAGAAAGGGATGAATCTGAACTATATGATTACTTGTAGTCAGAA  
 TTTGCCAAAGCAAATATTTCAAATCAACTGACTAGTGCAGGAGGCTGTTGATTGGCTCTTGACTGTGATG  
 CCCGCAATTCTCAAAGGAGGACTAAGGACCGGCACTGTGGAGCACCTGGCTTTGCCACTCGCCGGAGCAT  
 CAATGCCGCTGCCTCTGGAGGAGCCCTTGGATTTTCTCCATGCACTGTGAACTTCTGTGGCTTCAGTTCTC  
 ATGCTGCCTCTTCCAAAAGGGGACACAGAAGCACTGGCTGCTGCTACAGACCGCAAAGCAGAAAGTTTCG  
 TGAAAATGTCCATCTTTGGGAAATTTTCTACCCTGCTCTTGAGCCTGATAACCCATGCCAGGTCTTATAGA  
 TTCCTGATCTAGAACCTTTCAGGCAATCTCAGACCTAATTTCCCTTCTGTTCTCCTTGTCTGTTCTGGGC  
 CAGTGAAGGTCCTTGTCTGATTTTGAACGATCTGCAGGTCTTGCCAGTGAACCCCTGGACAACCTGACCA  
 CACCCACAAGGCATCCAAAGTCTGTTGGCTTCCAATCCATTTCTGTGTCTGCTGGAGGTTTTAACCTAGA  
 CAAGGATTCCGCTTATTCCTTGGTATGGTGACAGTGTCTCTCCATGGCCTGAGCAGGGAGATTATAACAGC  
 TGGGTTCGCAGGAGCCAGCCTTGGCCCTGTTGTAGGCTTGTCTGTTGAGTGGCACTTGCTTTGGGTCCAC  
 CGTCTGTCTGCTCCCTAGAAAATGGGCTGGTTCTTTTGGCCCTCTTCTTTCTGAGGCCCACTTTATTCTGA  
 GGAATACAGTGAGCAGATATGGGCAGCAGCCAGGTAGGGCAAAGGGGTGAAGCGCAGGCCTTGCTGGAAGG  
 CTATTTACTTCCATGCTTCTCCTTTTCTTACTCTATAGTGGCAACATTTTAAAAGCTTTTAACTTAGAGAT  
 TAGGCTGAAAAAATAAGTAATGGAATTCACCTTTGCATCTTTTGTGTCTTTCTTATCATGATTTGGCAA  
 ATGCATCACCTTTGAAAATATTTACATATTGAAAAGTGCTTTTAAATGTGTATATGAAGCATTAAATTAC  
 TTGTCACTTTCTTTACCCTGTCTCAATATTTTAAAGTGTGTGCAATTAAAGATCAAATAGATACATTAAGAG  
 TGTGAAGGCTGGTCTGAAGGTAGTGAGCTATCTCAATCGGATTGTTCACTCAGTTACAGATTGAACTCC  
 TTGTTCTACTTCCCTGCTTCTCTCTACTGCAATTGACTAGTCTTTAAAAAAAGTGTGAAGAGTAAGCAAT  
 AGGGATAAGGAAATAAGATCT (SEQ ID NO:1)

MADDYGSESTSSMEDYVNFNFTDFYCEKNNVRQFASHFLPPLYWVFIVGALGNSLVILVYWYCTRVKMTD  
 MFLNLAIADLLFLVTLPFWAIAAADQWKQTFMCKVNSMYKMNIFYSCVLLIMCISVDRIYIAIAQAMRAH  
 TWREKRLLYSKMVCFTIWLAAALCIPEILYSQIKEESGIAICTMVYPSDESTKLKSAVLTLKVILGFFLP  
 FVVMACCYTIIHTLIQAKKSSKHKALKVTITVLTVFVLSQFPYNCILLVQTIDAYAMFISNCAVSTNIDI  
 CFQVTQTIAFFHSLNPVLYVFGFRFRDLVKTLKNLGCISQAQWVSFTRREGSLKLSSMLLETTSGLS  
 L (SEQ ID NO:2)

FIGURE 1

Underlined = deleted in targeting construct

**Bold** = sequence flanking Neo insert in targeting construct

**AATATTTTCCTTGACCTAATGCCATCTTGTGTCCCCTTGCGAGCCCTATTCCTAACATG**  
**GCTGATGACTATGGCTCTGAATCCACATCTTCCATGGAAGACTACGTAACTTCAACTTC**  
**ACTGACTTCTACTGTGAGAAAAACAATGTCAGGCAGTTTGCGAGCCATTTCTCCACCC**  
**TTGTACTGGCTCGTGTTTCATCGTGGGTGCCTTGGGCAACAGTCTTGTTAT** CCTTGTCTAC  
TGGTACTGCACAAGAGTGAAGACCATGACCGACATGTTCCCTTTGAATTTGGCAATTGCT  
GACCTCCTCTTTCTTGTCACTCTTCCCTTCTGGGCCATTGCTGCTGCTGACCAGTGGAG  
TTCCAGACCTTCATGTGCAAGGTGGTCAACAGCA **TGTACAAGATGAACCTCTACAGCTGT**  
**GTGTTGCTGATCATGTGCATCAGCGTGGACAGGTACATTGCCATTGCCCAGGCCATGAGA**  
**GCACATACTTGGAGGGAGAAAAGGCTTTTGTACAGCAAAATGGTTTGCTTTACCATCTGG**  
**GTATTGGCAGCTGCTCTCTGCATCCCAGAAATCTTATACAGCCAAATCAAGGAGGAATCC**  
**GGCATTGCTATCTGCACCATGGTTTACCCTAGCGATGAGAGCACCAAAGTGAAGTCAGCT**  
**GTCTTGACCCTGAAGGTCATTCTGGGGTCTTCCCTTCCCTTCGTGGTCATGGCTTGCTGC**  
**TATACCATCATCATTCACACCCTGATACAAGCCAAGAAGTCTTCCAAGCACAAAGCCCTA**  
**AAAGTGACCATCACTGTCCTGACCGTCTTTGTCTTGTCTCAGTTTCCCTACAAGTGCATT**  
**T** TGTTGGTGCAGACCATTGACGCCTATGCCATGTTTCATCTCCAAGTGTGCCGTTTCCACC  
AACATTGACATCTGCTTCCAGGTCACCCAGACCATCGCCTTCTTCCACAGTTGCCTGAAC  
CCTGTTCTCTATGTTTTTGTGGGTGAGAGATTCCGCCGGGATCTCGTGAAAACCCTGAAG  
AACTTGGGTTGCATCAGCCAGGCCAGTGGGTTTCATTTACAAGGAGAGAGGGAAGCTTG  
AAGCTGTCGTCTATGTTGCTGGAGACAACCTCAGGAGCACTCTCCCTCTGAGGGGTCTTC  
TCTGAGGTGCATGGTTCTTTTGAAGAAATGAGAAATACATGAAACAGTTTCCCCACTGA  
TGGGACCAGAGAGAGTGAAGAGAAAAGAAAAGTCAAGAAAGGATGAATCTGAACTATAT  
GATTACTTGTAGTCAGAAATTTGCCAAAGCAAATATTTCAAATCAACTGACTAGTGCAGG  
AGGCTGTTGATTGGCTCTTGACTGTGATGCCCCGAATTCTCAAAGGAGGACTAAGGACCG  
GCACTGTGGAGCACCTGGCTTTGCCACTCGCCGGAGCATCAATGCCGCTGCCTCTGGAG  
GAGCCCTTGGATTTTCTCCATGCACTGTGAACCTCTGTGGCTTCAGTTCTCATGCTGCCT  
CTTCCAAAAGGGGACACAGAAGCACTGGCTGCTGCTACAGACCGCAAAGCAGAAAGTTT  
CGTGAAAATGTCCATCTTTGGGAAATTTTCTACCCTGCTCTTGAGCCTGATAACCCATGC  
CAGGTCTTATAGATTCTGATCTAGAACCCTTCCAGGCAATCTCAGACCTAATTTCTTTC  
TGTTCTCCTTGTTCTGTTCTGGGCCAGTGAAGGTCTTGTCTGATTTTGAAACGATCTG  
CAGGTCTTGCCAGTGAACCCCTGGACAAGTGAACACACCCACAAGGCATCCAAAGTCTGT  
TGGCTTCCAATCCATTTCTGTGTCTGCTGGAGGTTTTAACCTAGACAAGGATTCCGCTT  
ATTCTTGGTATGGTGACAGTGTCTCTCCATGGCCTGAGCAGGGAGATTATAACAGCTGG  
GTTTCGAGGAGCCAGCCTTGGCCCTGTTGTAGGCTTGTCTGTTGAGTGGCACTTGCTTT  
GGGTCCACCGTCTGTCTGCTCCCTAGAAAATGGGCTGGTTCTTTTGGCCCTCTTCTTCT  
GAGGCCCACTTTATTTCTGAGGAATACAGTGAAGCAGATATGGGCAGCAGCCAGGTAGGGCA  
AAGGGGTGAAGCGCAGGCCTTGTGGAAGGCTATTTACTTCCATGCTTCTCCTTTTCTTA  
CTCTATAGTGGCAACATTTTAAAAGCTTTTAACTTAGAGATTAGGCTGAAAAAATAAGT  
AATGGAATTCACCTTTGCATCTTTTGTGTCTTTCTTATCATGATTTGGCAAAATGCATCA  
CCTTTGAAAAATTTTACATATTGGAAGAGTGTCTTTTAAATGTGTATATGAAGCATTAAT  
TACTTGTCACTTTCTTTACCCTGTCTCAATATTTTAAAGTGTGTGCAATTAAAGATCAAAT  
AGATACATTAAGAGTGTGAAGGCTGGTCTGAAGGTAGTGAGCTATCTCAATCGGATTGTT  
CACACTCAGTTACAGATTGAACCTTGTCTTACTTCCCTGCTTCTCTCTACTGCAATTG  
ACTAGTCTTTAAAAAAAAGTGTGAAGAGTAAGCAATAGGGATAAGGAAATAAGATCT

FIGURE 2A

Gene Sequence  
Structure \*

231 bp      Sequence Deleted      394 bp

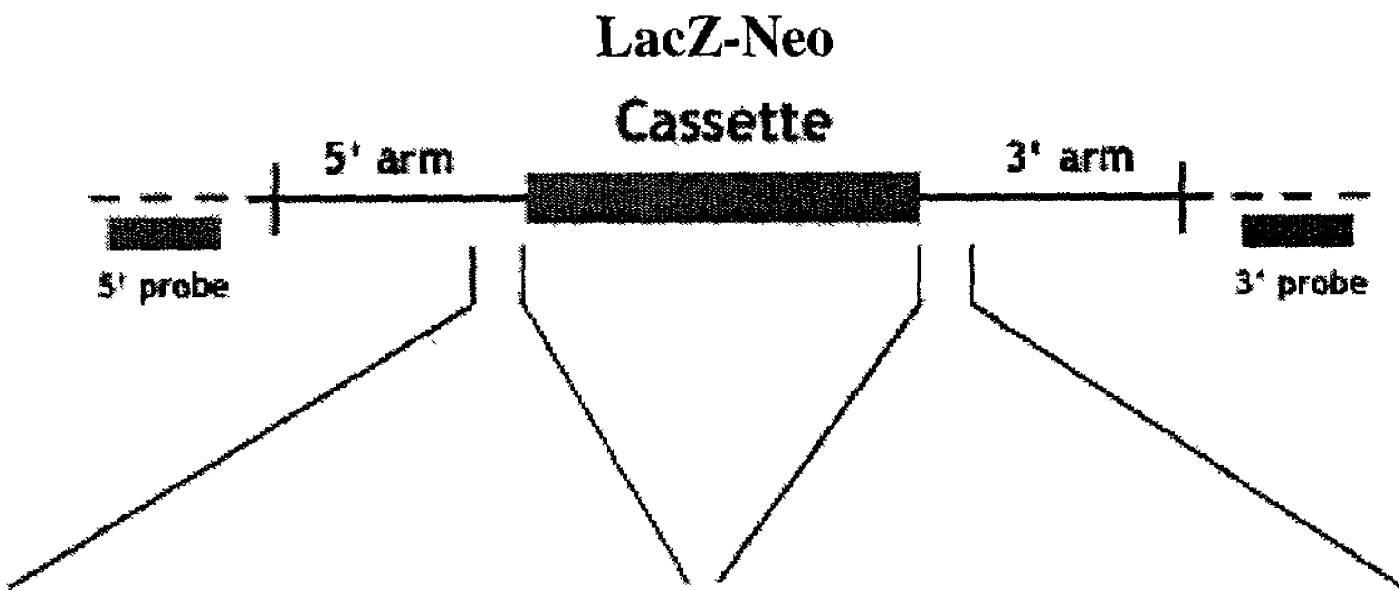
Size of CDS: 2577 bp



Targeting Vector\* (genomic sequence)

Construct Number: 3340

Arm Length:  
5': 2.7 kb  
3': 4 kb



———— Targeting Vector  
----- Endogenous Locus

\* Not drawn to scale

<p>5' &gt;TATTCCTTACAGAGCCTTATT CCTGGCATGTTTGATGACTTCAGC TATGACTCCACTGCTTCCACAGAT GACTACATGAATTTGAATTTTCAGT AGCTTCTTCTGTAAGAAAAATAAT GTCAGGCAGTTTGCAAGCCATTTT CTCCCACCTCTGTACTGGCTTGTG TTCATTGTGGGCACCTTGGGCAAC AGCCTGGTCAT&lt;3' (SEQ.ID.NO.3)</p>	<p>5' &gt;TGTACAAGATGAACTTCTACA GCTGTGTGCTTCTCATCATGTGCA TCAGTGTGGACAGATACATTGCCA TTGTACAGGCCATGAAGGCTCAGG TCTGGAGGCAGAAAAGGCCGCTAT ACAGCAAGATGGTCTGCATTACCA TCTGGGTGATGGCAGCTGTGCTCT GCACCCAGAAATCCTGTACAGTC AAGTCAGTGGG&lt;3' (SEQ.ID.NO.4)</p>
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FIGURE 2B